

# Music and theatre in Germany

# The German Tribune

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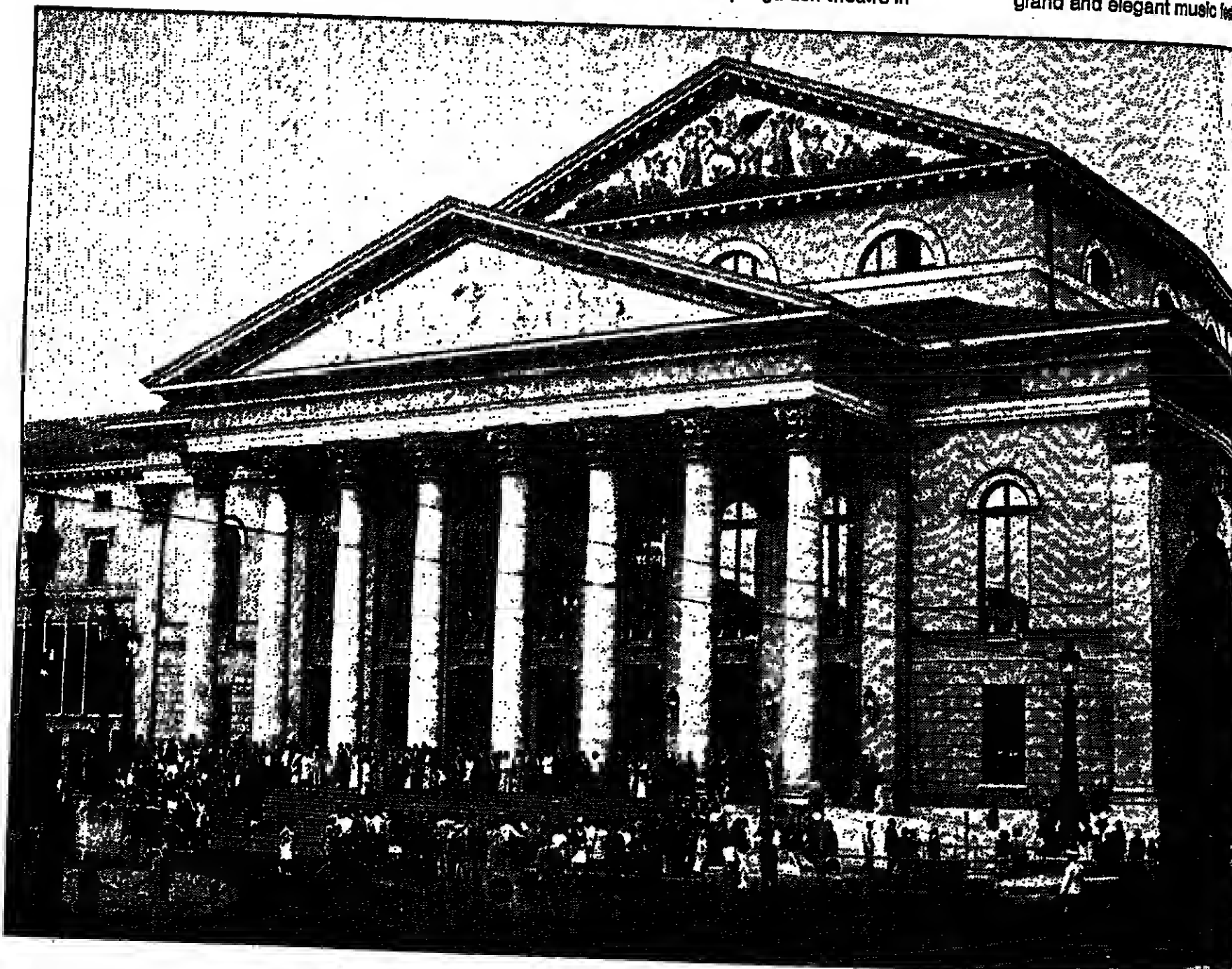
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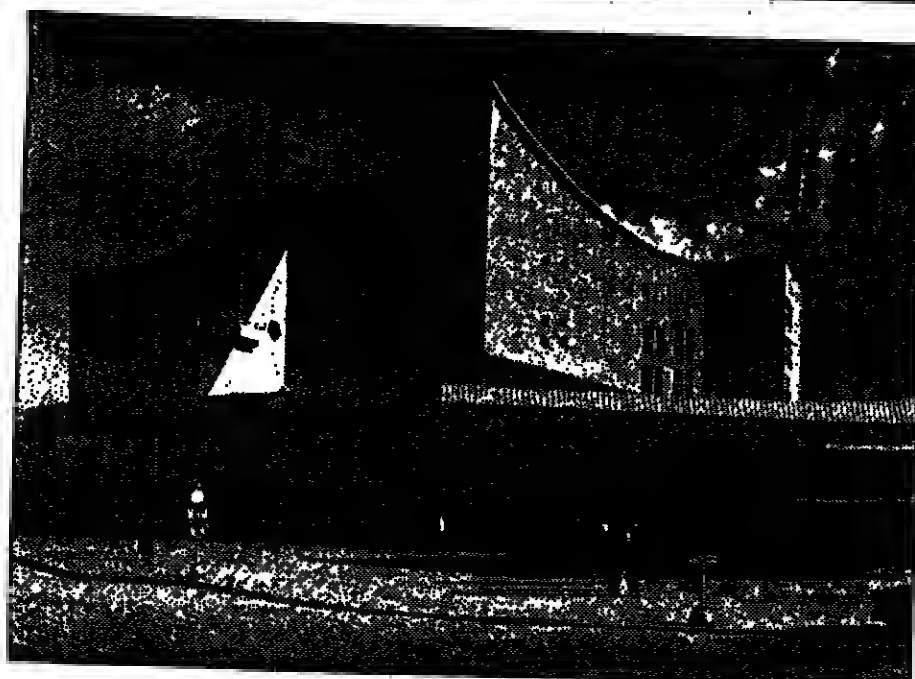
As early as 1882 musicians in Berlin founded a Philharmonic Orchestra, and from 1960 to 1963 the unique "Philharmonie" at the Kamperplatz in Berlin was built. 2,200 terraced seats with the podium in the centre. A place for great conductors, for great concerts. It shows

that Germany has castles and palaces, cities and industry but also unusual temples of the arts. Other examples are the theatre set on a monumental flight of outdoor stairs in the medieval town of Schwäbisch-Hall; the Baroque garden theatre in

Hanover-Herrenhausen; the theatre in the palace of Sagan near Mannheim, founded 1749, and the Munich Open Bavarian National Theatre, 1811, burnt down later and rebuilt in full splendour in 1963. A grand and elegant music



National-Oper, Munich  
Philharmonie, Berlin



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## Bonn helps Warsaw with export credit

Polish party chief Edward Gierek has called off his visit to Hamburg where he was to have met the Chancellor, Helmut Schmidt. The Polish Ambassador to Bonn, Jan Chylinski, said the change in plans was because of internal problems in Poland. He said that another date, at the beginning of December, had been proposed for a meeting between the two leaders. Bonn government spokesman Armin Grünwald said another date, before the election in October, was possible. He said that the strikes in Poland would not influence the decision by a consortium of German bankers to issue credits of DM1.2bn. Bonn will supply a third of the cash as an export guarantee.

Poland, in the words of a patriotic march dating back nearly 200 years to the days of partition, is not lost yet. This is a sentiment echoed by contemporary Polish economists even though their country is in the throes of an economic crisis.

Optimism was shared by experts at the Bonn Economic Affairs Ministry a few days before Polish Party leader Edward Gierek was due to visit.

Their assessment of economic ties between Poland and the Federal Republic of Germany was: "Not at all bad, as a starting point."

Similar views were voiced by the Confederation of German Industry (BDI) in Cologne, where a spokesman said:

"The Poles deserve respect, not to say admiration, for the way they are coping with their economic difficulties."

Was this just fair-weather politics — encouraging noises prior to the Hamburg talks between Mr Gierek and Chancellor Schmidt?

There were signs this was all such fine words might amount to. Companies that actually traded with Poland were tight-lipped on how they rated trade ties past and future.

It was either the holiday season or the board member responsible was away on business or the company spokesman chose to make do with a few non-committal words.

Businessmen were only prepared to divulge their true feelings provided they were assured of absolute discretion: no names (especially company names), no pack drill.

Given what they had to say, this desire for discretion was hardly surprising: "Problems? The Poles have them by the bucket!" "Poland is the toughest of all East bloc countries", "Products are poor and no returns are accepted" and "Failure all along the line."

"The Poles are up to their necks in it," a banker said, feeling it was hardly necessary to go into depressing detail and give chapter and verse.

Even bearing in mind that West German businessmen are invariably given to lamenting economic ties with Poland looked far from promising.

The message had been spelt out with customary diplomacy six months previously by Otto Wolff von Amerongen, head of the Standing Conference of Chambers of Commerce and Industry and chairman of the Committee on Trade with the East Bloc.

The Cologne industrialist said Poland was going through a spell of poor form and advised economic policymakers on

both sides to think in terms of a middle-distance runner rather than a sprinter.

A sprint specialist, he explained, was soon at the end of his tether, and this was something neither side could be interested in.

Yet oddly enough the starting point for further development of trade ties really is none too bad. Poland has tapped a source of hard currency earnings that long lay fallow for lack of cash towards capital outlay.

Warsaw has finally started mining commodities such as copper, coal and vanadium, which is one of the four most sensitive raw materials.

Metallgesellschaft, Frankfurt, have signed two contracts with Poland for the supply of copper, each for 40,000 tonnes a year.

The first was concluded with the aid of an export credit guarantee by the Bonn government, the second was underwritten by banks without Bonn credit backing.

The copper deliveries have been paid for in advance, allegedly to enable the Poles to boost mining capacity, but this is both unusual and controversial.

There have been rumours that Poland has spent the copper money to make ends meet in other departments, but be that as it may, Poland has gained access to foreign exchange.

The vanadium project, worth an estimated DM750m, has also been backed by Bonn. It is due to run on a longer-term basis. Deposits have yet to be mined. Deliveries are not expected to start for another 10 years at least.

Polish coal is similarly intended to earn hard currency. Now coal has regained prestige as an energy source, import restrictions in West Germany have been eased.

Poland, the world's fourth-largest coal producer and second-largest exporter, is to supply the Federal Republic with 2.5m tonnes a year.

A further contract due to be signed shortly would mean a further one million tonnes a year from 1985.

The other 100 joint ventures are nothing



## This way, gentlemen . . .

Four Republican Party members of the US Senate visited Bonn this month. They discussed foreign policy and security issues with Chancellor Helmut Schmidt. From left, pictured with Herr Schmidt, are Thad Cochran, William S. Cohen, Howard Baker and Henry L. Bellmon. (Photo: dpa)

ing spectacular. Britain, France and Italy have all pulled off major vehicle plant deals with Poland; not so West Germany, which has emerged empty-handed in this department.

This was partly because trade ties were not expanded until late in the day, after the Bonn-Warsaw treaties were signed.

It was also because Bonn, unlike Britain, France or Italy, has steadfastly refused to subsidise interest on loans out of the taxpayer's pocket.

The only large-scale project envisaged, a coal gasification plant that was to have cost DM2.6bn, has been shelved.

Technological developments in this sector were proving so rapid the Poles preferred not to go firm on any one technique at too early a stage.

Still, a DM250m pilot plant is to be built in collaboration with Krupp's, so there is a prospect of coming back to the larger-scale project at some future date.

A proposed joint venture to mine silver deposits likewise came to grief even though West German companies and banks were in its favour.

But Bonn refused to underwrite the deal, much to the relief of all concerned in retrospect. The high price of silver was what made the project so attractive, and much of its attraction has faded now the price has plummeted.

Businessmen complain most frequently, however, about day-to-day trading. Poland would appear still to have difficulty

in supplying enough manufactured goods for export.

There is said to be no continuity, while further shortcomings attributed to the country's economic system include failure to meet deadlines and poor product quality.

Polish import-export permit procedures often take so long that products a German importer was keen to buy are no longer marketable once the go-ahead is given.

Poland has even been unable to deliver such predictable and well-established seasonal produce as Christmas geese and ducks. Last Christmas a leading German department store was left in the lurch.

Not for a moment do the Poles deny that such mishaps occur. Some time ago Janusz Kaszuba of the Polish Foreign Trade Institute called on exporters to pull their socks up.

Exporters would be blacked, he said, who supplied poor quality goods or failed to meet delivery deadlines.

But Poland's foremost problem is indebtedness, which could well affect trade ties with West Germany. The heavier the debts, the less foreign exchange is available for imports.

What is more, after five poor harvests in succession Poland is once again having to spend its hard-earned foreign exchange on grain and oil shipments.

Poland is heavily in debt. Its current indebtedness to the West totals roughly \$20bn, about a fifth of which, or DM9bn, is owed to West Germany.

The Soviet Union is in a much better position as a debtor. It has \$13bn in debts but credits worth \$9bn. Poland's credits in the West total a mere \$1.2bn.

So far the Poles have always been able to meet interest and capital deadlines, but the weight of debts is extremely heavy, so much so that it makes Western creditors feel uneasy.

This year alone Poland is due to repay \$6bn in capital and interest on loans. Continued on page 3

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'Biological computer' of the housefly a key to questions about man



(Bremer Nachrichten, 14 August 1941)



Nineteen years ago, on 13 August 1961, East Germany saved itself by erecting the Berlin Wall. Communist Germany, which must take advantage of every point it can score because it cannot afford to give away even half a point (as borne out by the ado over the place where Chancellor Schmidt and East German leader Erich Honecker met) acted in the nick of time when it built the Wall.

The people of the GDR were leaving the country by the thousands, voting with their feet.

East Germany could not have sustained this drain for another couple of weeks. As a result, the Warsaw Pact decided to erect this century's most shameful structure and to risk world peace if necessary.

The reaction by the then mayor of West Berlin, Willy Brandt, who said "the Wall must be done away with" was normal and a clear moral stand. But it was illusory.

The Wall, a product of angst, is here to stay because East Germany's angst is as strong today as it was then.

But even sealed off as the GDR has been for the past 19 years, the Communist rulers of East Germany have been unable to consolidate their rule — both politically and economically.

## ■ INTRA-GERMAN AFFAIRS

### The Wall still a symbol of GDR instability

The West has been aware of this and has taken it into account in its policy — more so than has been good for it. By understanding the needs of the GDR dictatorship it also had to go along with its immoral political repression, thus damaging its own moral position.

Bonn has forgone demanding that basic moral values be upheld in the GDR only for the sake of obtaining a few concessions on the humanity front. It has had to pay for this with political and material assistance for the dictatorship in the other Germany.

The whole thing is a complicated web of double standards. But then, Bonn is not the first democratic government that has had its problems on this score. A similar situation existed during the Nazi era.

The mistake of our present *Deutschlandpolitik* is that this moral conflict is swept under the carpet and that Bonn

even goes so far as to talk of "normalization".

There can be no normal neighborly relations between a free country and a dictatorship — and this is particularly so in a divided nation.

As a result, no normal relations have developed in the past decade. Instead, relations have been marked by a constant wheeling and dealing with the Wall.

Whenever the GDR needs economic aid it uses slight improvements for the people as a bargaining point, making sure, however, that the repression within its borders, which is vital for the regime, remains intact.

This will also apply to the forthcoming talks between Schmidt and Honecker.

The GDR's internal instability, which led to the construction of the Wall 19 years ago, has worsened.

### Affluence gap continues to increase

And yet the shops in West Germany are full of goods.

It follows that the GDR does not export too much but produces too little.

Despite inflation, unemployment and diminishing growth in West Germany, the GDR constantly lags further and further behind.

The average monthly net income of salaried people in the Federal Republic of Germany is just under DM1,800, compared with 780 East marks in the GDR. The buying power, however, where private consumption is concerned is roughly one to one for the two currencies.

Even in the social security sector the GDR spends only one-third of the amount spent in West Germany, and annual savings in the West are five times those in the East.

The average assets of our working population are seven times higher than in East Germany.

The GDR of today is a classical low-wage country. A saleswoman nets 500

East marks, a skilled worker 800, a medium echelon manager between 1,200 and 1,500 and top managerial staff heading a company with a payroll of 10,000 to 30,000 make 2,500 East marks a month.

This alone shows why the communist leadership had to close its borders. Disregarding political convictions, people would leave East Germany en masse simply to triple their earnings.

West Germany will achieve a GNP of about DM1,500bn in 1980, compared with the GDR's 300bn marks.

We produce DM32.6 per worker per working hour compared with the GDR's 16 marks. In other words, East German productivity is only half that of West Germany.

The Wall has thus failed to achieve its objective, i.e. to consolidate the country economically and close the gap with the Federal Republic of Germany.

But it has been illusory from the very beginning to hope that the Wall was a temporary structure.

Granted, the GDR was at a disadvantage after the war. It received no Marshall Plan aid, had to pay more in reparations and lost four million people to the West between 1949 and 1961.

But even after the Wall was built, East Germany continued to fall behind — and that is the crux of the matter.

(Der Tagesspiegel, 10 August 1980)

### Border trend to self-shooting devices

The Work Group therefore intends to call on the Bonn government to raise the issue of these self-shooters at the forthcoming CSCE Follow-up Conference in Madrid.

Despite the murderous effects of these devices, the Wall claims no lives in its 19th year, according to the Work Group.

A total of 176 people have died along the German-German border since 13 August 1961: 106 along the border with West Germany and 70 along the Berlin Wall.

Above all, the Communist regime has been unable to catch up economically with the West — they have, in fact, fallen further and further behind.

To understand that the GDR exists without the Wall does not mean accepting this structure, for that spells the end of all political momentum.

As a result, we cannot stop the GDR time and again that destruction to the border guards to kill, its mines and booby traps, draconian reprisals against people applying for exit visas can only be an imposition on their democratic negotiating partner.

To pillory the GDR's political immorality is a must for Germany if it is not itself to be morally damaged.

Those who say that we must not be too heavy a burden on the GDR, be told: how much should that be permitted to impose on the Republic of Germany, and get away with it?

(Kiehl Nachrichten, 13 August)

### Lingering hope for unity

Whether or not there is a "German answer" to the "German question" depends on people and government.

It is, however, certain that there is interplay between the government and governing concerning reunification freedom.

Willy Brandt has said that he never intends to talk of "reunification" and Helmut Schmidt has said he does not expect German unity in this century.

So far as the public is concerned those over 60 remember a divided and undivided Germany.

Taking all this into account, it is surprising and encouraging that recent polls show that 67 per cent would opt for unification if they had a say in it, that only 28 per cent are prepared to forgo this aim.

But since these 28 per cent that oppose the Constitution and are prepared to write off their fellow countrymen to the other Germany, their number is depressingly high.

The desire for a united Germany is far better than the hope for it.

And since majorities can impose their will on the government in a democratic two-thirds of the people have now opted for the Bonn actively to pursue unification and not to forfeit it to the communist wish for a divided Germany for opportunistic reasons.

(Die Welt, 13 August 1980)

The Work Group considers that due to the deterrent of the new weapon system along the border that there have been no fatalities in the past 12 months.

The number of attempted escapes was lower than ever before during this period.

In 1977, there were still 721 attempts to 'West Berlin' while in 1979 the number dwindled to 463, and in the first half of this year there were only 10. The overall number of refugees dropped from 6,011 in 1975 to 3,512 in 1979.

Despite the fact that West Germany "buys" an annual 1,100 to 1,200 political prisoners and despite the 1979 amnesty in East Germany, some 5,000 political prisoners are languishing in GDR prisons, 60 per cent of them for preparing, attempting or abetting escapes.

(Frankfurter Neue Presse, 12 August 1980)

## ■ ENGINEERING

### Doubts remain over method of bridge-building

Work has set and anchored against the concrete so as to press the concrete sections together.

These steel sinew make prestressed concrete much better on tensile strength and more likely than reinforced concrete to withstand heavy traffic and not develop rifts.

Prestressed concrete is more rigid and enables bridges to span greater distances at lower heights. Many economic techniques would be impossible were it not for prestressed concrete.

Besides, experts claim it costs less to maintain and service than other materials, which likewise cuts costs.

Yet after more than 20 years' experience in West Germany, including the usual teething troubles, queries remain. Are there shortcomings that are attributable to the system?

Have all foreseeable influences been taken into account? Have serious mistakes been made in construction? It is not just a matter of safety but of costs and repercussions for future bridge construction.

Rifts and rifts at section joints are issues that have gained notoriety. Section joints are the point at which one prestressed rod is linked to another.

Research and civil engineers agree that rifts are no problem as long as they are not wider than 0.2mm in prestressed concrete.

Wider rifts need repairing, especially at section joints where damp or even salt could seep through to the steel, causing corrosion.

Because of the variations in strain due to variations in traffic load and volume material fatigue would result, leading to one or more reinforcement rods snapping.

Bridgebuilders in West Germany have so far only come across a snapped rod once, and the discovery was made in time. Bonn Transport Minister Kurt Gscheidle promptly ordered priority examination of section joints in all bridges for which his department was responsible.

Engineers have checked more than 1,600 bridges, over 400 of which included section joints. Preliminary findings indicate that whereas only 13 per cent or so of bridges without section joints had rifts, about 70 per cent of bridges with section joints had them.

One in six had rifts wider than 0.2mm, yet experts still agree that bridges with section joints are a suitable system. They enable designers to come up with particularly economic solutions.

What is more, rifts such as have arisen so far can, they say, be prevented by imposing more stringent regulations and improving design details.

But rifts are not the only defects inspectors have come across. Road salt has been found to destroy surfaces and concrete casing of reinforcement steel has been found inadequate, just as, ducts have been found faulty.

These shortcomings likewise lead to corrosion of steel set in the concrete, and inspectors and Herr Gscheidle have yet to comment in public on the extent of such damage and shortcomings.

Architects and civil servants agree, however, that serious damage can only arise when several shortcomings coincide. Engineers and designers can, for

instance, make mistakes when drawing up the blueprint for a bridge.

Specific factors, such as the strain that occurs due to concrete heating while it sets or strain in the vicinity of section joints, have not always been taken into account.

Mistakes of this kind could be avoided in future by adapting construction procedures to the construction technique.

Some of the shortcomings that have been discovered are without doubt attributable to mistakes in construction. Bridgebuilders blame an increasing shortage of skilled construction workers and pressure to meet performance and schedule deadlines.

The authorities have accordingly beefed up regulations. Last year's review of the industrial standard for prestressed concrete took the findings into account.

But many experts feel not only standards but also tender practice could be improved. Contractors should be required to submit estimates of a bridge's lifespan and the overall cost of construction and maintenance.

Critics of the current practice are also considering the possibility of consulting independent authorities before contracts are awarded. What is more, they are clamouring for the construction industry to come clean on the mistakes it has made in the past.

Research engineers and building contractors occasionally wonder whether the current practice does quality sufficient justice. Safety margins often cost more than the authorities are prepared to pay.

Critics also call for the development of new techniques to improve bridge maintenance and make less frequent checks necessary.

They include corrosion protection for steel to make the steel less susceptible to mistakes during construction, concrete that is better resistant to road salt and improved quality control procedures during construction work.

Further training for civil engineers likewise leaves much to be desired. They ought, in particular, to be taught greater personal responsibility and less reliance on standards.

A number of experts doubt whether local authorities in areas remote from the mainstream of autobahns and trunk roads are competent to carry out the necessary inspection work on bridges.

The Transport Ministry is not yet able to say what maintenance and repairs have cost so far. Detailed figures are due for publication in autumn.

Esvaria, however, has completed its survey of the 2,000-odd prestressed concrete bridges down south. Repairs needed in 50 cases are expected to cost about DM3.5m over the next five years.

At the beginning of 1979 there were about 6,900 prestressed concrete bridges in the Federal Republic of Germany. Some 1,600 have so far been checked.

Assuming them to be representative of the total, about five to seven per cent of bridges are in need of repairs ranging from odd rifts to full-scale demolition.

Complete, 100-per-cent safety is, of course, out of the question. So the general public's worries about bridges remain only too understandable.

Antient Roman bridges span rivers and valleys to this day. The Romans dealt with this problem in their own way. Their pontifex maximus, or supreme bridgebuilder, was little short of a god.

But who betide him if one of his bridges collapsed. It was not only the will of the Gods. It cost him his head.

(Die Zeit, 8 August 1980)

### Politics at first hand

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## ■ THE ARTS

## A Wagner sequel when the Bayreuth festival is not quite enough

Some people in Bayreuth are so enthusiastic about Wagner that they are not satisfied with a festival performance lasting five and a half hours. There is now hope for them. In the nearby town of Pegnitz a "delightful spectacle" is being held. All one needs is patience, openness and a little humour — plus DM 200. But more of this later.

Wolfgang Wagner played a major part in coining the phrase Bayreuth work-hop, which means that opera performances should be regarded primarily as work in progress.

Operas are constantly being revised and improved — and there is also the element of curiosity about what additional insights next year's performance may bring.

Götz Friedrich's version of *Lohengrin* at this year's festival has proved to be a theatrically effective version but not absolutely overwhelming interpretatively.

In contrast with his version of *Tannhäuser* at the Bayreuth festival, there was no clear description of social tensions. And stage set designer Günther Uecker did not give him the same help here as in his brilliant Stuttgart version of *Parzifal*.

Nonetheless, the circular revolving set as a substitute for the swan gave fascinatingly changing shadow outlines.

The great surprise of the evening was newcomer "Woldemar Neisson" as conductor. He was here conducting his first Wagner opera and did so with élan and unwavering flair, constant movement and impressive structuring.

Also impressive were: Elisabeth Connell and the ever-present Ortrud and Lief Roar as Telramund, driven by ambition and by his wife, Karan Armstrong made up for some technical errors of



Theatrically effective: Götz Friedrich's version of 'Lohengrin'.

(Photo: Josef Oehrlisch)

sound by the intensity of his performance, but Peter Hofmann as Lohengrin relied perhaps too heavily on his handsome appearance and magnificent armour.

His only real achievement was the tailing of the story of the Holy Grail — but that, after all, is what the opera is about.

Those for whom all this was not enough could then travel on to the Pegnitz happening, which took place in the Pegnitz Post Hotel.

It was organised by Peter P. Pachi, one-time directorial assistant to Neuwirth and now a free-lance director (he will be directing *Don Giovanni* in Kassel in February).

He was spurred on to the happening by August Everding who a year ago recounted that at the Milan Scala there were once ten intervals in which ten courses were served.

In Pegnitz there were six courses altogether, part of what was proclaimed to be a "total culinary work of art."

However the six courses (from Franconian mushrooms on flaky pastry, coriander soup, duck liver sausages, and pigeon-breast to meringues and fresh raspberries) did not completely distract attention from the artistic highlights of which there were twenty: from the greeting of the faithful to Siegfried Wagner's musical fairy tale of the thick, fat pancake.

Half-naked Rhine maidens through the dew-fresh swimming pool.

Three torch-bearing women around an incestuous tale of love. Is told, Brünnhilde sings *Hell* in the solarium of the house — a quite funny but very close to a slapstick.

Richard Wagner can be discovered more effectively through his own work. An endless poem — a "Not" — is recited from horseback and the of green shoes from a ladder — sentiments are after all, explicit.

A video tape shows an open explanation all the complicated ships in the Ring, coming to the

## Hannoversche Allgemeine

clusion that it is good that the *Ring* of the Gods makes complicated signs on inheritance matters superior.

There was an amusing comedy in classical style in which competent director Hans-Peter Mohr combed Wagner's text with Offenbach's music.

The excerpt from Nestoy's *Lohengrin* parody was also amusing, but the appearance of Pegnitz chief Hans Pflaum as the Duke of Trabant with a dessert creation was even more impressive.

This was all effective as a recipe could have been improved in the situation. The Pflaum brothers, who do need to advertise because their rival is always booked out during the festival, hope that apart from imparting their image this little happening will lax the strict ceremony of eating.

But the theatrical supplement should be spicier and more peppery. Pflaum's director should have taken a leaf out of chef Pflaum's book. Pflaum's culinary creations were hot and spicy.

Rainer Wagner

(Hannoversche Allgemeine, 12 August 1980)

## Calculations pay off as German scientist uncovers huge Roman sundial

A huge Roman sundial that has been sought for centuries has finally been uncovered.

It has been discovered by Professor Edmund Buchner, director of the German Archaeological Institute.

The Augustinian solarium is not just the biggest, but it is the most ingenious sun-clock ever made.

It is in a hole eight feet deep. The Roman Emperor Augustus, as we know, was not always too favourably disposed towards the Germans and after three Roman legions were wiped out by the Germanic in the Teutoburger Wood he made his famous lament: "Varus, Varus, give me back my legions."

And now a German of all people is in the process of polishing up the fame of the Romans.

The discovery, says Buchner, was not luck, it was calculation.

But it was not a sudden inspired piece of calculation. Buchner has been working on his calculations for years. A publication on the gigantic device, of which the Peace Altar (Ara Pacis) and the mausoleum of the emperor are also part, had already been printed. All that was missing were the proofs.

In summer 1979 the important Via Campo Marzio was barred to traffic for two months and the road was dug up so that the archaeologists could pursue their researches into antiquity.

But, Buchner says, this was precisely a place where the plaster and bronze of

the clock were stolen many centuries ago.

However, Buchner, from Straubing, in Bavaria, found what he was looking for in the cellar of No. 48 in the Via Campo Marzio. One goes down the dilapidated staircase which has not been used for years and see a brightly lit hole and hears the continuous sound of an electrical pump: clear spring water gurgles over the smooth travertine plaques onto which are carved a robust date line and in Greek letters the star-circle sign of the virgin.

Buchner: "The days are those between 23 August and 1 September, between 23 March and 1 April. This water was known in classical times. It comes from the gardens of Sallust on the Pincio Hill and still supplies a number of wells."

But there were surprises this time too. Each phase of Roman history has its own bronze letters and from the light, almost playful form of the dates which also contains such details as "end of the summer winds" the Professor concludes: "This is a new version of the sun clock of the Emperor Domitian (81-96). The

original of Augustus is another half a metre deeper."

The solution to the riddle seems easy. Domitian ordered this new version because until the Tiber dams were built in the 1930s the field of Mars was always flooded, with the result that every year there were deposits of an average of one centimetre in thickness. The plaster and bronze lines of the months, days and hours were simply brought up higher.

In his researches into what he calls an equation with many unknowns Buchner had a classical counterpart — the brilliant mathematician Facundus Novus — as Pliny called this mathematician, who was also an astronomer.

The hand of the clock — a 29.42-metre obelisk of Psemmothrix, 11694-588 B.C. from Heliopolis in Egypt was excavated in 1748 from what is now the Piazza del Parlamento. As early as the 15th century bronze lines were found near the Church of San Lorenzo in Lucina. These were described by a classical commission led by the famous painter Raphael.

But it was Buchner who first disco-

vered the purpose of the whole device and how the sun clock worked. According to him these buildings are a contained wonder of the world, like the Egyptian pyramids or the Parthenon in Athens.

Buchner: "The Romans were very religious and the whole magnificent structure contained so to speak the hope of the emperor."

"Legend had it that Augustus was bitten by Apollo in the shape of a snake — a legend to which he never objected — at the time of the winter solstice, as that with him a new year, a new age began."

"He first saw the light of day at the rise on 23 September, the day on which day and night are of equal length. The shadow line is dead straight and ends in the middle of the Altar of Peace."

"So Augustus is a cosmic emblem, the symbol of an era of peace and plenty and happiness."

The whole structure, twice as big as Peter's Square today, was worked right down to the last centimetre.

Vol. Möller

(Kölner Stadt-Anzeiger, 11 August 1980)

## ■ ARTS EDUCATION

## Culture 'always first to feel government axe'

Whenever the government needs to make cuts, foreign cultural policy is one of the first victims — despite all the protestations about the importance of this aspect of foreign policy.

The President, the Chancellor and the Minister of Foreign Affairs, as well as the Land prime ministers, who travel a great deal, never seem to let an opportunity pass of stressing the importance of the trinity of politics, economics and culture in our relations with other countries.

Since Ludwig Erhard's government a statement of 1965 foreign cultural relations have officially been described as the "third pillar" of our foreign policy.

In Sunday and holiday speeches, politicians constantly pay lip service to foreign cultural relations.

But when it comes to the crunch and cuts have to be made in foreign cultural

policy, these speakers are conspicuous by silence.

When additional EEC expenditure or special aid to Turkey put extra strain on the national budget, it was relatively easy to make up for some of this by slashing expenditure on culture.

Fixed public expenditure is taboo, as is expenditure on personnel. So when cuts have to be made, attention turns to those items without any fixed limits, where government and administration can spend according to their own judgement.

In practice, though, there can be no question of free spending in the Ministry of Foreign Affairs culture budget.

More than 40 per cent of the funds

allocated for foreign cultural spending go to the over 300 German private schools abroad. These funds clearly cannot be cut in any given year, even though one can argue in some cases about how useful these schools are.

The school authorities rely on Bonn financial support and have taken on commitments accordingly.

Looking at other half of the foreign cultural budget, one finds narrow limits on possibilities of cutting. Organisations such as the Goethe Institute and the German Academic Exchange Service cannot have their funds for personnel or other fixed spending cut in the short term. And their programmes can hardly be reduced any further than they already have been.

So closer inspection reveals that there is no so very much scope for redistribution in the foreign cultural budget.

This is something the initiated have long known but which the politicians are constantly forgetting.

There is an explanation for this which Hans Arnold gives in his recent book *Auswärtige Politik — Ein Überblick aus deutscher Sicht* (Carl-Hanser Verlag).

"As political careers can hardly be built on foreign cultural policy, there is only sporadic interest in us in parliament."

Arnold, now ambassador in Rome and former director of the Culture Department of the Ministry of Foreign Affairs

seems to have had an idea of the situation in the summer of 1980 when he completed his manuscript at the beginning of the year.

He writes: "Whenever public funds are tight, culture in general and cultural policy in particular are harder hit by cuts than other sectors of public spending."

Despite this pessimistic analysis from the experienced cultural politician Hans Arnold there is a small chink of light at the moment: the Bonn Minister of Finance seems, on the basis of his considerable foreign experience, determined to prevent all schematic and severe cuts.

It would be more than regrettable if because of short term budget problems the Bonn government failed to realise at least some of the goals to which the Bonn government committed itself in

1977, with the agreement of the entire Bundestag, following the Commission of Enquiry on Foreign Cultural Relations.

This applies particularly to improvements in the media. The realistic and self-critical image of West Germany to be conveyed must be conveyed not only by the traditional means (and this includes exhibitions, books and concerts as well as films, radio and TV programmes).

All the experts also agree that we need more intensive contact in this way with West and East Europe and in North and South America.

In 1979 the Bonn government promised the forthcoming publication of a "representative cultural magazine" for distribution abroad.

It will be interesting to see whether this relatively inexpensive project can at least be started this year despite the budgetary cuts.

The fate of this magazine will be of great interest to those who would like to take seriously the governments' statements on foreign cultural policy since 1965.

Karl Mörsch

(Deutscher Allgemeines Sonntagsblatt, 10 August 1980)

## A home found for Polish studies centre

the German-speaking world and in the West generally.

As a writer and essayist, Dedocius has been concerned to explain the inner connections of this literature, to portray Polish authors (for instance in Polish profiles, 1975) and to analyse the interrelations between the two neighbouring peoples.

It is extremely fortunate that Dedocius could be persuaded to accept the post of director.

The Institute is a registered club, independent and non-profit-making. Any income is ploughed back into the Institute's work.

The President of the Institute is Marion Gräfin Dönhoff of *Die Zeit*. The chairman of the curatorium is Darmstadt's mayor Seba.

Running costs are paid by the city of Darmstadt; the Rhineland Palatinate and Hesse share the costs for staff, the Bonn government and a number of major private foundations share the cost of the Institute's projects.

Among the most urgent tasks are a bibliography of German language literature on Poland (in conjunction with the *Deutsche Bibliothek*) and a kind of Who's Who, a list of the institutes, organisations and people in West Germany concerned with Poland.

The Institute has already held a colloquium with Polish translators on what has been translated in both countries and what gaps need to be filled.

It has now sent out invitations to 12 Polish publishers and publishers' readers to make an information tour of German publishing houses.

The Institute also aims to build up a German-language library of Polish classics, a multi-volume compendium of contemporary Polish literature and studies of Polish cultural history.

The main emphasis will be on literature, i.e. areas hardly touched by day-to-day politics but going to the deepest roots of the cultural existence of the two neighbouring peoples.

(Kölner Stadt-Anzeiger, 6 August 1980)

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## SCIENCE

## 'Biological computer' of the housefly a key to questions about man

Scientists are trying to find out exactly what makes the common housefly actually fly.

The experiments seek to establish the link between the nerve cells that process visual impressions and the muscles that carry out the flight instructions.

The fundamental question is: what are the principles by which the nerve cells combine to become biological computers?

It is a question which applies also to humans and ultimately answers to questions about the function of the human brain will be involved.

The scientists are at the Max Planck Institute for Biological Cybernetics in Tübingen.

Compared with the human brain and its 100 billion nerve cells, that of the fly seems rather primitive. It has a mere 1 million.

But this does not mean that it is easy to understand.

Professor Werner Reichardt, director of the Tübingen Institute: "The nerve cells of the fly's brain are linked with each other and interact accordingly."

"They form a closely meshed and complex network. To understand this grid system we must not only examine the individual cells but the whole system in all its complexity."

"It's the same as with a computer: you don't understand it if you look at its component parts alone."

Since the function of the brain rests on the cooperation of many cells, the analysis of it must take place on a higher plane.

To start with, it is necessary to establish the mathematical and logical rules by which the cells are connected with each other to form little cell groups.

The groups are again linked through special circuits, and it is this whole which enables this "computer" to perform certain calculations.

The signals transmitted by the nerves are processed along the lines of so-called algorithms and converted into programmes for processing by the "computer."

On the highest plane, the question is: how are these algorithmically arranged

cell groups "wired" with each other? What is the circuitry?

Why did the Tübingen researchers pick the housefly for their experiments?

Professor Reichardt: "We are particularly interested in the 'data processing' within the visual system of the fly's brain. Like all insects, the fly has faceted compound eyes, each consisting of about 3,000 sections, the so-called ommatidia."

"Each of these ommatidia is a separate little eye equipped with sensor cells, so-called receptors, which convert light into nerve signals; in other words, electrical impulses that are conveyed by the nerve cells, the neurons."

From there the signals are transmitted to a further neuron level, and it is there that the complex calculating processes take place that lead to the actual visual perception.

The manner in which the insect flies and reacts to its visual environment depends on how the information has been processed in the neurons.

To gain insights into the circuitry of this computer, the Tübingen researchers provide the fly with a carefully defined visual environment which enables them to measure the insect's flight reactions.

The aim of this behavioural study is to fathom the interaction between sensation and flight reaction. This is to enable the researchers to understand how the nerve cells function.

This is much more difficult than it seems because perception is almost impossible to pin down. Many sensations that are transmitted are converted into abstracts and thus lose some of the original information that has been transmitted.

The apparatus needed is accordingly sophisticated. It can best be described as a flight simulator in the centre of which the fly is stationed. The whole thing is a cylinder, the inner wall of which can be decorated with various patterns, thus creating a visual environment.

The fly is kept stationary on its back. Continued on page 14

## Move to reduce experiments using animals

Are millions of animals pointlessly tortured and killed every year in the service of science and industry?

There are no reliable figures on animal experiments, and scientific publications that would separate the necessary from the unnecessary experiments are extremely rare.

To remedy this, Bonn Health Minister Antje Huber has instituted a DM30,000 annual research prize.

The prize will go to researchers who find new ways of replacing animal experiments by other methods and thus reducing the number of animals that are sacrificed on the altar of science.

There are as yet no legal provisions calling for statistics on animal experiments, though something of this nature is now being prepared in the European Council.

If current plans come to fruition, records will have to be kept on the type and number of animals used in experiments.

These records will also have to show whether the experiments were carried out without anaesthesia and whether the animals were exposed to considerable pain and suffering.

The pharmaceutical industry is now voluntarily trying to establish the number of animals used in experiments.

Estimates range between 7 and 14m a year, rats being the main victims.

The 300 new pharmaceuticals that come on the market every year each require about 120,000 rats and 9,000 guinea pigs.

Dogs and similar animals are much better off because their cost calls for economising.

But research can hardly do without them because they are indispensable for certain medical experiments.

But it would be a great help if animal experiments were discontinued where

they tell us little about the suitability of a drug for humans.

Many other experiments could be dropped if multiple tests carried out by different manufacturers for the same type of drug were discontinued. After all, it should be enough if one manufacturer carries out these tests on behalf of all the others.

It must be regarded as progress that Germany and Japan, two leading chemicals and pharmaceuticals manufacturers, now recognise each other's test results.

The new prize is intended to draw attention to the problem.

According to the Ministry, scientists by and large carry on with their animal experiments without considering the possibility of substituting them by other testing methods.

Gerd Rauhaus  
(Frankfurter Neue Presse, 7 August 1980)

## Anti-tumour substance gets a boost

But this has not been confirmed by a similar study by the American Cancer Society.

Though the condition of 7 out of 16 breast cancer patients improved after interferon treatment, in the case of a similar test with bone cancer patients the success rate was considerably smaller: Only 3 out of 11 showed an improvement, but there were serious side effects.

Still, nobody disputes any more that interferon checks the growth of tumours.

But little is known as to what therapy should be applied to which type of cancer and which type of interferon (there are many kinds) should be used in each case.

Little is also known about the correct dosage because researchers need ade-

## Accent is on prevention

The future belongs to prophylactic inoculations against bacterial infections and similar new therapy says microbiologist Professor Brunner of Düsseldorf University.

Writing in the medical journal *Deutsches Ärzteblatt*, he points out that many bacterial diseases are on the increase despite modern pharmaceuticals. "Notwithstanding antibiotics, bacterial diseases in such highly developed industrial countries as Germany and the United States still rank fifth as causes of death."

Bacteria thus play a major role in lethal illnesses.

Since there are clear limits to conventional treatment of infectious diseases, the era of prophylactic inoculations is now dawning, says Professor Brunner.

While prophylactic inoculations against virus diseases such as polio have become the order of the day, the development of inoculations against bacterial diseases has been neglected in favour of pills.

As a result, polio and diphtheria have virtually been wiped out, while bacterial diseases against which we have no inoculations are either spreading or holding their own.

Professor Brunner stresses that, in spite of the invention of antibiotics, the number of deaths from bacterial diseases has not diminished in frequency. There are 12,000 cases a year, and the same is true of scarlet fever.

These figures show that inoculations must not be neglected as a possible means of prevention.

Moreover, many methods of stimulating the body's own defences have been developed in the past few years.

These include serums which provide protection against a number of different bacteria and substances made from bacteria themselves which stimulate the body's defence mechanism without actual immunising.

Another promising field of research is immunogenetics. There are many indications that the defensive mechanism can be influenced through genetics.

(Lübecker Nachrichten, 3 August 1980)



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(Frankfurter Rundschau, 7 August 1980)



## ■ BEHAVIOUR

## 'Monopoly-in-reverse' game goes on the restricted list

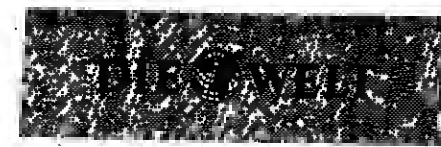
Any joke a censor understands deserves to be banned," satirist Kurt Tucholsky once said.

But the Bonn Authority for the Control of Literature Endangering Youth (BPS) is not a censorship office. Recently BPS (which is part of the Bonn Ministry for Youth and Family Affairs) for the first time put a game on the banned list.

Provopoly is modelled after the classical Monopoly game — deliberately so. Unlike capitalist Monopoly, Provopoly is an anti-capitalist civil war game.

The place in which brutal policemen, the "blues", fight it out with the terrorist bombers of the "reds" is called "Grünstadt."

While Monopoly players try to achieve a "monopoly" with tried and true capitalist methods, Provopoly play-



ers must try to arrest, kidnap, beat up, infiltrate and bomb.

The instructions read like an urban guerrilla textbook: "Blue wins if the bomb and its carrier are locked in the building and the bomb is exploded never the less."

Or: "I'm here outside the dean's private lavatory together with many other people. The dean's sitting inside — a humorous clause in reverse" (numerous clauses is a reference to the quota system for admission to German universities).

It was the Bavarian Labour Ministry that filed the application for the ban-

ning of Provopoly, which has been marketed for the past four years.

The news magazine *Der Spiegel* recently asked "Has the satire of it all not been understood?" The question was directed at Elke Monssen-Engberding, 29, who signed the order that put Provopoly on the index.

But Frau Monssen-Engberding is unfazed, saying that the BPS realises that certain games, especially playing cards, have their satirical component which is intended to amuse. But this very amusement attracts children and juveniles and promotes their desire to play Provopoly.

The game may now no longer be sold in shops to which juveniles have access nor may it be shown in shop windows. Fines for violations are stiff.

The banning of Provopoly under the law governing the dissemination of publications endangering youth is only one of many such cases for BPS.

While in the early years of the Federal Republic of Germany this agency dealt primarily with nakedness, the emphasis since 1978 has been more on violence, glorification of the Nazi era and of war.

From its inception until 1978, the BPS banned only 18 books, magazines, records, etc. for their brutalising effects, glorification of crime or racial hatred. All other publications that were put on the index were pornography. But in 1978 and 1979, of the 455 banned publications 162 were banned for promoting violence.

This is not so much due to a new wave of violence but to the fact that the Authority is making better use of existing legislation. Moreover, now it is not only Land ministers and senators who may apply for a banning order but also all of the nation's 600 youth authorities.

Hella Steinberg  
(Die Welt, 2 August 1980)

together with a friend because he has spent all his money.

Meanwhile, things have livened up in the amusement hall. It is now 1 p.m. and there are several 16 and 17-year-olds busying themselves at the one-armed bandits at the back.

The authorities say the whole thing has not yet become a serious enough problem to call for stricter controls. They stress that the staff of the amusement hall must check the age of their customers — "but of course no-one can tell whether they actually do."

Though juveniles are not the rule in such establishments, they are as dedicated players as their older brethren.

Rising turnover figures show that the business with the killer automats and one-armed bandits pays handsomely.

Statistics show that in 1966 there were ten amusement halls with an annual turnover of more than DM1m. In 1976, 41 had a turnover of DM6.6m; and in 1978, 35 made DM7.4m.

(Der Tagesspiegel, 2 August 1980)

Generations of husbands have suffered from the cleaning mania of their wives.

They often become victims at the most inopportune moments, for instance during a thrilling TV movie when the wife decides that the time has come to clean the carpet in front of the TV set.

Since the beginning of August, however, Germany's sorely tried husbands can scientifically diagnose whether their wives suffer from clinical clean-o-mania. A study shows that the clinical case devotes at least 20 per cent of her housekeeping time to cleaning carpets, polishing floors, dusting and keeping fixtures gleaming.

These facts have been established by Kassel University students studying product design. Headed by Professor Holmut Krauch, the team delved into the everyday life of the housewife.

Supported by Professors Brigitte Wolf and Karlo Voss, the students spent 12 months researching housework. In the course of their work they discovered clean-o-mania.

The housewives involved in the study contributed their share by keeping exact records of their work. They also agreed to visits by the students.

The students were not satisfied with

## Why the house-proud housewife develops cleaning mania

categorising the housewives according to whether they lived in cities or in suburbs or in the country. They also compared their results with those of an American study. It turned out that most of the findings coincided.

Since working women who have to look after the house after work were included in the study, the team arrived at an average daily housework time of five hours.

Pure housewives devote more than 40 hours, the normal working week, to their households. But they frequently overestimate the actual time they devote to housekeeping.

The time spent on such chores rises when a family moves from the city to the country.

The reason for this is that cultural interests diminish in the country because little of that nature is offered, and housewives are under pressure to show that they are keeping busy.

This is further promoted by the fact

## Housefly

Continued from page 12

revolving on an axle in the control cylinder.

So the test fly can only turn its vertical axis.

The instrument also generates a visual environment. If this is given a black strip on an otherwise white wall of the cylinder, this brings the eyes of the fly and it flies towards it.

This fixation reaction can be in two ways. The cylinder with the stripe can be rotated to enable researchers to measure the "guidance" of the fly.

On the other hand, it is also possible to make the fly control the cylinder through a highly sophisticated electrical system. This is a perfect simulation of free flight.

Based on a series of such experiments the Tübingen researchers have managed to track down the various nervous systems with the help of a fly gets its bearings in its environment.

One of these algorithmical systems controls the perception of movement frequently, fast and without much another one the perception of position. Yet it would be unfair to imply while the third enables the fly to orientate itself in moving objects in relation to the background.

It might seem odd that such a simple self-evident abilities should require this sophisticated apparatus and extensive experiments. It would seem justified to ask whether the sense this entails is warranted.

But the researchers are trying to uncover the basic principles by which nervous networks are linked with each other and so find an answer to the question how relatively simple basic elements such as nerve cells can be combined into such complex, high-performance structures as a fly's — and man's — brain.

Walter Eisele  
(Kölnischer Stadt-Anzeiger, 8 August 1980)

## SPORT

## Jochen Mass battles on round the grand prix circuits

Laffite of France in a Ligier won the 1980 German Formula One Grand Prix at Hockenheim. Carlos Reutemann of Argentina, driving a Saude Williams, second and Alan Jones of Australia, third, in a Williams, third. Jones, who won the world championship, was racing with six laps to go when he was hit by tyre trouble. Cologne's Jochen Mass finished eighth for the Arrows team on a poor start.

Asked what he thought of Cologne's Formula 1 racing driver Jochen Mass, Alan Jones politely replied: "He's a nice lad, easy-going, friendly." He was equally polite in commenting on how he rated Mass as a driver: "As a matter of principle I never comment on the qualities of my colleagues as drivers." And that

he would not, in any case, have found it easy to analyse Germany's only Formula 1 racing driver. The only way their paths really cross is when they lap each other on the track.

Jones could only say that he laps Mass frequently, fast and without much trouble. Yet it would be unfair to imply while the third enables the fly to orientate itself in moving objects in relation to the background.

He is an old hand in cars of all categories, but in Formula 1 Mass, who is based in the South of France, has really made his mark.

Experience alone does not make you a winner in the grand prix circus, and he

could well be said to have missed his greatest opportunity when he drove for McLaren from 1975 to 1977. With McLaren his team-mates were former world champions Emerson Fittipaldi of Brazil and James Hunt of Britain, and alongside them his shortcomings were clearly apparent.

Mass seems always to have had difficulty in adapting to the requirements of the track. This was later his trouble with ATS, as it is now with Arrows.

And the champagne will have to wait. Indeed, one can hope he has overcome his poor form at Brands Hatch, where he came a mere 24th in training.

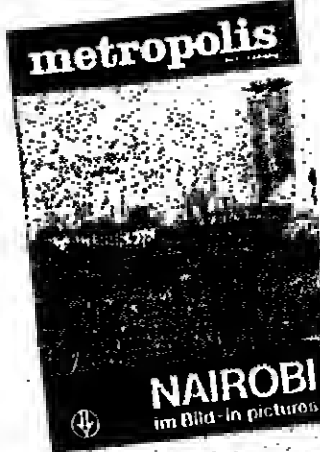
He started as last man, and in such cases all he can do is play the waiting game for which he is proverbial, gradually

Poor organisation marred the finale of the Tour of Germany just as it had bedevilled much of the rest of Germany's premier road racing event for professional cyclists.

Much to the annoyance of more than 7,000 spectators at the Olympic Stadium in Munich, only two cyclists turned up for the victory ceremony. The others failed to emerge from under the showers.

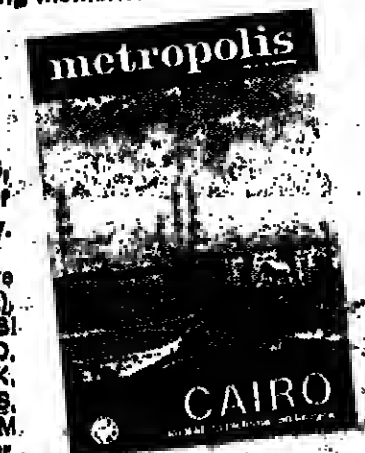
The two winners who gave the fans their due were Gregor Braun, the easy

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Jochen Mass... driving not just a matter of experience.

(Photo: Sven Simon)

Driver Marc Surer of Switzerland was badly injured in South Africa but has fully recovered. "In my absence the ATS has become an outstanding car," he says.

But championship points have proved elusive, and Schmid and Surer were hoping put an improved ATS through its paces in England.

Michael Oberdick

(Stuttgarter Nachrichten, 7 August 1980)

## Cyclists agree race was too difficult

overall winner of the Tour, and Werner Devos. But even Braun was far from happy, given his thumping victory:

"I am shattered. Not even the three-week Giro d'Italia was as tough as this year's Tour of Germany."

He was critical of the organisers: "It was sheer madness to hold such a tough tour so soon after the other exhausting tours in recent weeks."

"The organisers need not be surprised if they fail to persuade any leading pros to enter next year."

He was particularly critical of the distances. Each stage was more than 200 km (125 miles). The fourth, from Frankfurt to Baden-Baden, was nearly 300 km (200 miles).

Braun hedged on his victory, which was clear enough. He finished more than four minutes ahead of Sweden's Tommy Prim:

"It is wonderful to have won the premier race in Germany but there are others I would sooner have won and there are successes I rate more highly than this Tour of Germany."

He was probably thinking ahead to

the world championships in Sallanches, France, on 31 August, where he hopes to be among the front runners.

Even Bernard Hinault, considering the Tour of Germany little more than a training session after his retirement from the Tour de France, reckons Braun is in there with a chance: "Saronni, de Vlaeminck, Willems, van der Velde and Gregor Braun are the men to watch for me."

As for himself, Hinault will be on home ground and he naturally feels he stands a fair chance of world championship honours.

Braun could well benefit in Sallanches from the rivalry between Giuseppe Saronni and Francesco Moser. Moser will be looking out for Saronni, so Braun might manage to slip through.

In professional cycling nationality is by no means the sole consideration. Team membership and the sponsor's name on the winning jersey are at least as important.

Moser and Braun seem to get on well and are staying together even now their team sponsor has pulled out of racing because Moser failed to win the Giro d'Italia, according to ice cream manufacturer Sanson.

Next season they will be racing under the colours of a kitchen furniture manufacturer instead. "The contract has already been signed," says Braun.

(Bremer Nachrichten, 12 August 1980)



Gregor Braun... a tough ride.

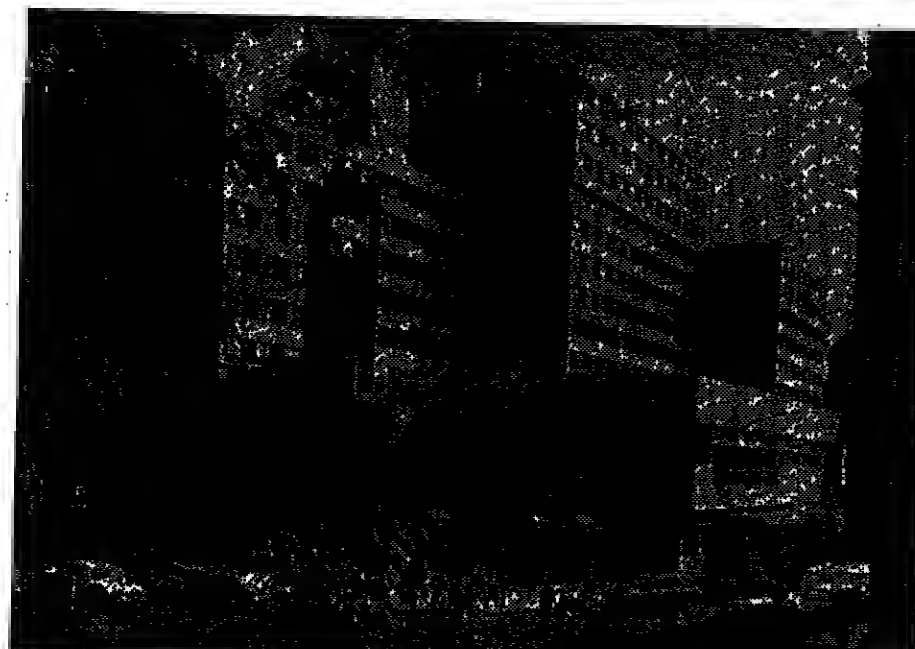
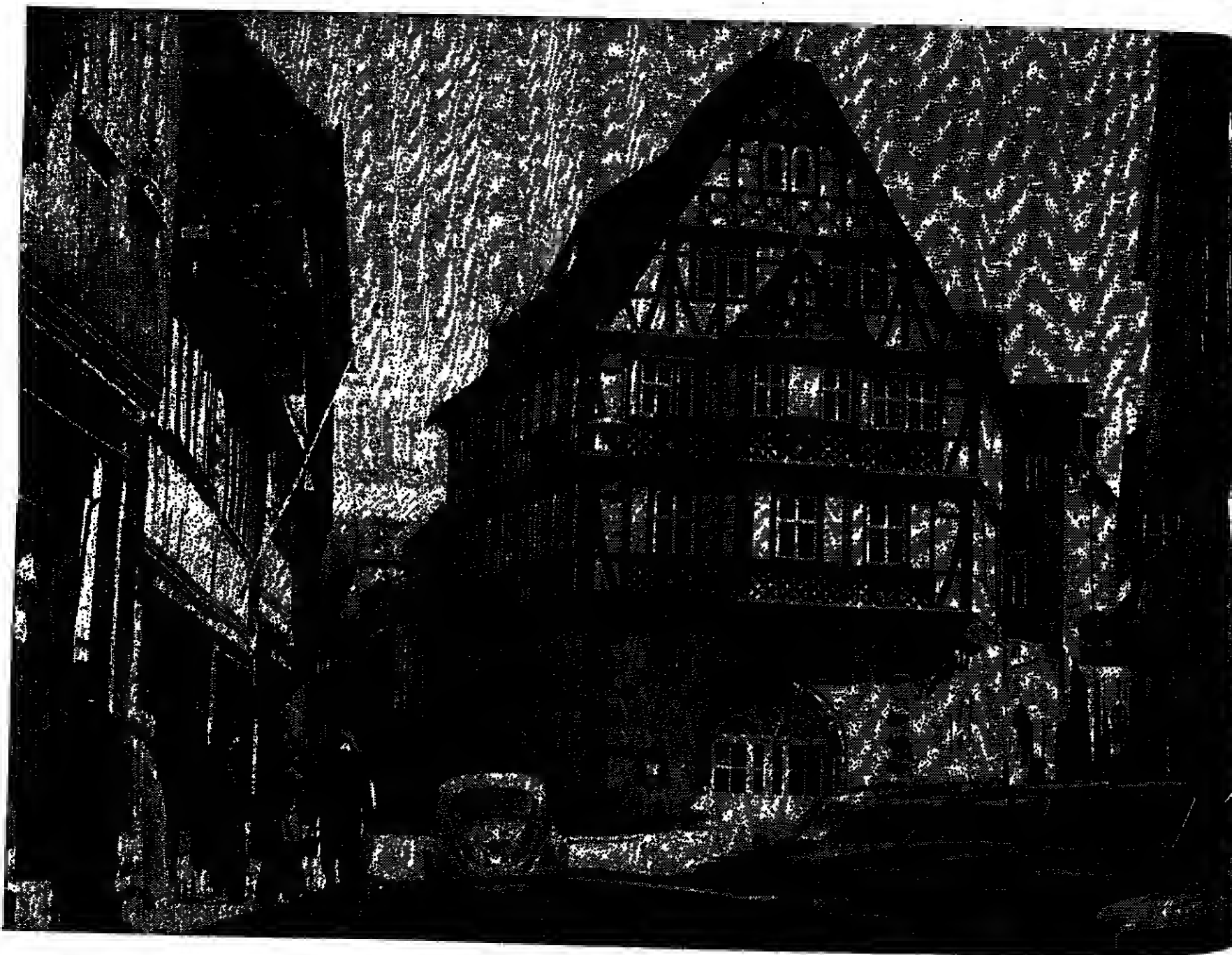
(Photo: Horst Müller)



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## DEFENCE

### Rising costs of fighter-bomber project hit navy, air force budgets

The escalating cost of the Tornado jet fighter-bomber project will hit the German Luftwaffe and navy budgets hard.

The original basic estimate was DM15m per aircraft in this joint German-British-Italian project.

Now it is DM35.26m, and that is without other costs including weapons systems.

These increases have thrown military expenditure out of normal ratio.

For example, the German navy is expected to spend roughly 63 per cent of its budget on ships and the remaining 37 per cent on aircraft.

Now the Tornado project has ensured this proportion will be almost exactly reversed for the next two years.

The new multi-purpose fighter bomber was presented in Wahn recently by Andreas von Bülow, secretary of state in the Ministry of Defence.

It is a jet which fascinates the military and which is going to cost the taxpayer dear.

The basic estimate was DM15m. Now it is DM35.26m. To this must be added DM4.5bn in "development costs" for the 322 jets the Bundeswehr has ordered. (At the end of the sixties, when estimated costs were still comparatively low, the Bundeswehr wanted 1,000.

Then come the billions of DM for the

various weapons systems to be installed in the jets.

The Bonn Ministry of Defence has several times stated that the Tornados will only carry conventional weapons and in no circumstances nuclear weapons.

This means that, in all, the cost of a Tornado plus weapons systems today is DM67.36m. This is an astonishing development considering that the Ministry of Defence was quoting DM62m in May of this year.

The costs for the plane alone have increased by 135 per cent in the past 10 years and extra costs have risen at about the same rate.

One of the reasons for this is the differences between the economies of the three partners, West Germany, Italy and the United Kingdom.

Fluctuations in exchange rates have to be taken into account, as do rates of inflation.

And the costs of aircraft-building materials have risen by over 170 per cent in the past decade since the Tornado was first planned.

One major cost factor is the large amount of titanium used. The price of titanium has risen by 400 per cent in the past 10 years.

The Tornado has special qualities which make it ideally suited for deployment in central Europe.

Now that certain tricky technical difficulties have been overcome, the Tornado is able to land and take off on very short runways.

This means that operations would even be possible on partly-destroyed airstrips. The jet is very fast even when flying very low and can be steered manually or automatically. This means it is able to fly under enemy radar into enemy territory.

The jet's electronic weather forecaster makes it an all-weather aircraft and its target-aligner ensures optimum accuracy.

The Tornado has been tested for over 3,500 flying hours.

The verdict: "This weapons system can fulfil the role assigned to it."

From 1981 onwards pilots who have so far flown Starfighters will be retrained to fly the Tornado.

The Luftwaffe and the German Navy are due to receive the first three dozen Tornados in 1982.

Whether further improvements then lead to further price increases then remains to be seen. *Klaus J. Schwehn*

(Frankfurter Neue Presse, 9 August 1980)

### Is the price worthwhile?

The people of this country were quite prepared to accept that the costs of the multi-purpose fighter jet Tornado would increase at the same level, or even faster than inflation.

This is particularly so because as the British and the Italians, with their less robust economies, were taking part in the project.

So for the past ten years we have learnt to judge the cost of this super-jet in terms of its essential importance for our defence and that of our Nato allies.

Originally the estimated price was DM15m per jet. Today it is DM67m and in two years, according to cautious estimates by experts, it will be between DM100m and DM150m.

Even the most passionate supporters of these all-weather tank-destroying jets and atomic bombers will concede that this price rise cannot be explained in terms of inflation alone.

The truth is that the Tornado is becoming a kind of prototype "wonder weapon" into which the countries concerned are packing all the good and expensive equipment and devices available.

Its electronic devices are by all accounts so advanced that the layman cannot help asking why the jet needs a pilot at all.

Some experts warned years ago that it was a mistake to neglect other forms of armament weapons systems and concentrate on one fighter jet.

But in those days politicians and military men believed that they could pay for everything: super jets, super tanks and super frigates.

Now they have got a very nasty shock they realise to their dismay that they can only pay for one "wonder weapon".

And they are not even sure that it is a wonder weapon. *Bernd Brügge*

(Lübecker Nachrichten, 9 August 1980)

### Concern over illegal arms dealing

German-made machine guns recently turned up in Saudi Arabia, a German-made ammunition plant arrived in South Africa instead of the official destination, Paraguay.

And artillery bound for Spain found its way instead to Argentina. None of these arms supplies in any way changed the balance of power in the countries concerned. And in terms of world arms deals their importance is negligible.

Nonetheless, the fact that German arms have found their ways to these areas of tension is worrying enough.

This is not just because this runs counter to official German government policy but because it underlines once again how ineffective all the checks, controls and pious intentions are.

West Germany has some of the toughest restrictions in the world on the export of arms.

Certainly, arms exports account for only a tiny fraction of this country's total exports.

There is no basis in reality for the nightmarish idea that 35 years after the end of the war large parts of the world could be flooded with German arms.

But this is no reason to rest on our laurels and point to the severity of arms restrictions.

The allegations against the Rheinmetall company underline the crooked and roundabout ways by which arms end up where they should not be.

A number of arms produced in West Germany are in high international demand. And arms dealers are resourceful. The barriers against arms deals with countries outside Nato seem to be becoming less effective.

The next Bonn government will have to look at the question of arms exports again.

It will have to ask itself whether the 1971 guidelines banning arms exports to areas of tension go far enough.

And it will have to re-think the clause stipulating that arms exported to Nato countries have to stay in those countries.

The government will also have to respond to proposals made recently by the SPD and FDP parliamentary parties. These proposals envisage the Foreign Affairs Committee of the Bundestag being given more information about government decisions on arms exports.

They would also like to see the granting of licences to produce arms made subject to controls.

Finally an aspect of the problem which is continually getting acuter: arms produced jointly with other countries are not subject to West German restrictions and controls. Advanced systems such as the Alpha Jet and the Tornado come into this category.

This is a serious gap in export restrictions, and it is difficult to see how it can be closed.

The seriousness of this problem becomes plain when one reads the Bonn government guidelines on development policy and the relevant section of the North-South Commission report.

In both we find constant appeals to the big arms exporters to cut their exports and to Third World arms importers to turn their attention to internal economic development.

Any increase in German arms exports would be a slap in the face for all these efforts. *Heinz Murrain*

(Kölnischer Stadt-Anzeiger, 12 August 1980)

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## ■ TRADE

Groundwork  
laid in  
Peking talks

Economic Affairs Minister Count Lambsdorff's recent talks in Peking are more than just a protocol visit although no immediate effects will be felt. Count Lambsdorff headed a German business delegation to China. In his opening address he said that the October 1979 Sino-German trade agreement would thus gain practical importance and the slogans of intensified trade relations and promotion of joint ventures would become reality.

But no specific decisions or data to facilitate the planning of business should be expected from the talks. In fact, this was not the purpose of the mixed government commission.

But as head of the delegation, consisting of bankers and industrialists, the minister had an opportunity to reaffirm one of the main objectives of the German business community: safeguarding German investments against political risks.

The Chinese, who view trade with the West primarily as an instrument to promote the transfer of science and technology, passed a law last year that would permit genuine joint ventures.

But there are still no implementation provisions to safeguard foreign capital from dispossession. Moreover, the transfer of capital is still restricted.

Without an agreement that would protect their investment in China, German businessmen are still hesitant to put their money into joint ventures.

Yet joint ventures would be the right instrument in reconciling German and Chinese interests.

The Germans would gain access to

Competition in  
the orient  
gets brisker

China experts have warned time and again against pinning excessive expectations on business with that country. This has now been reaffirmed by Bonn Economic Affairs Minister Count Lambsdorff heading a trade delegation in Peking, who said that Sino-German trade relations should be viewed with "realistic confidence."

Competition for this huge cake is now in full swing between the major industrial nations.

The Germans will have to stand their ground against Japan, France and Britain. Americans, too, see their big chance in China.

They hope to triple exports to that country by 1985. They hold that China will step up its imports by some 20 per cent by that year.

This is encouraging for those companies that have been searching for new markets.

So far as dealing with Japan is concerned, the industrial nations have made many mistakes. For many, Japan has remained a mystery — and this is one mistake that should not be repeated when dealing with China.

This is a huge country that should not be seen only as a market but as a cooperation partner.

Jens Peter Eichmeier  
(Stuttgarter Nachrichten, 11 August 1980)



Economic Affairs Minister Count Lambsdorff with Chinese leader Hua Guofang in Peking. (Photo: dpa)

the Chinese market and the Chinese could use these joint ventures as a vehicle for the transfer of technology and management while at the same time economising on foreign exchange reserves.

Present growth rates in Sino-German trade are enormous. The volume of trade has been increasing at the rate of 60 to 70 per cent every quarter.

But it must be taken into account that the original trade volume was rather modest to start with (DM3.8bn in 1979).

But this does not mean that there is not an enormous potential.



Are the Germans embarrassed now that they have been accused of being less industrious than our competitors on international markets?

As this as it may, 68 per cent of Germany's labour force, recent polls show, would be prepared to work two extra hours a day for the same pay should this be necessary.

This seems to disprove those union officials who have been attacking Economic Affairs Minister Count Lambsdorff for his suggestion that the Germans do not work hard enough.

A true reason for our diminishing competitiveness on world markets is not our high standard of pay nor is it our short working hours. Gerd Muhr of the German Trade Unions Federation told a newspaper recently.

Herr Muhr blamed this state of affairs on the international monetary system and those behind it.

He said: "Since the abolition of the Bretton Woods System, international competitiveness has largely depended on exchange rates. Manipulation and speculation with currency rates cannot be

Still, the initial euphoria has given way to realism.

The Chinese foreign trade authority and Germany's steel, chemicals and mechanical engineering industries are now working out exact figures in an effort to arrive at the true absorption potential of this huge country.

China is considered a good credit risk. The Hamburg HWWA Institute for the World Economy figures that the Western industrial nations would be prepared to grant China a line of credit amounting to 25 billion dollars.

But China is reluctant at the moment to go too deeply into debt. Last year, that country restricted its trade deficit to two billion dollars.

Imports of capital goods for modernisation are to be compensated for by increased exports and by substituting Chinese-made goods for imported ones whenever possible. But this again presupposes the importation of Western capital goods.

This is at the root of China's wish for joint ventures. As a result, the mixed German delegation hopes that some indication will be forthcoming soon that China is prepared to arrive at an agreement to protect foreign investments.

China does not yet seem to have a rigid modernisation plan. But certain priorities seem obvious and Western observers hold that the August meeting of the People's Congress (a sort of parliament)

Continued on page 7

China urged  
make an  
investment plan

The Federal Republic of Germany wants to step up trade and cooperation with China, Bonn Economic Affairs Minister Count Lambsdorff said at the beginning of his trade mission in Peking.

He stressed that Bonn would like to see the international subsidies rise to the level of the subsidies granted by the Ministry of Finance because the number of exports has been diminished by 340,000 (from 1.5 million in 1979 to 1.16 million in 1978).

Even the 'German' balance of payments deficit since 1979, he said, is only half as large as it was in 1978. More than 3.5 million farm workers are now employed in the agricultural sector.

Count Lambsdorff praised the fact that the agricultural sector has not been hit as hard as other sectors since 1949. Despite this hoodwinking, the agricultural sector has not slowed down during the 1974

recession due to lack of other work, the exodus from the countryside picked up again last year.

Most endangered are the remaining 100,000 small farms with a net annual income of around DM9,000 per family member.

In the farmers' own social and economic interests, this structural change will have to continue, said Bonn Agriculture Minister Josef Ertl.

He also stressed that a minimum population density must be secured in rural areas to preserve the settlement structure of the nation. This task will be even more important in the 1980s than it has been in the past.

This shrinking process of German agriculture has been deliberately promoted through state subsidies. After the introduction of special pensions for farmers who agreed to sell their land and state subsidies for those who are prepared to make social security payments in order to draw pensions, more than 50,000 farms covering 1.4 million acres were sold. This meant that the re-

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## AGRICULTURE

Farmers leave the land in droves,  
and there's no end in sight yet

More than one-quarter of Germany's farmers have given up their farms in the past 10 years to retire or to seek other work.

He stressed that Bonn would like to see the international subsidies rise to the level of the subsidies granted by the Ministry of Finance because the number of exports has been diminished by 340,000 (from 1.5 million in 1979 to 1.16 million in 1978).

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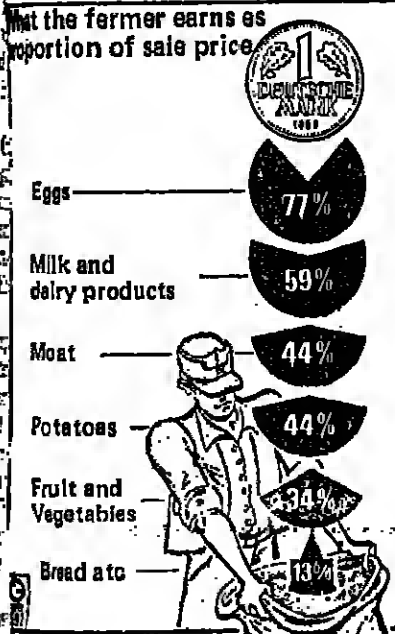
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Continued from page 6

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Germany is unlikely to hamper business. Though the Chinese still firmly believe in growth and affluence through capitalism, they are pragmatic enough to buy their technology where it is at its best, i.e. in the capitalist West.

Germany's raw materials supply is guaranteed for cooperation deals in raw materials sector that would result in a credit contingent on German exports if the money is used for a materials project that helps to develop Germany's raw materials supply.

China is very interested in German mining equipment. After a great deal of visiting back and forth, there is now a Chinese order to the tune of 20 million DM.

German prospects are also good for chemical equipment for steel mills and chemical factories.

(Hannoversche Allgemeine, 12 August 1980)

Trade unionist offers 'solution'  
for world market sales

compensated for by forgoing wages and time off.

"The trade unions are not responsible for exchange rates. But they can be blamed for relatively small wage demands in the past which, coupled with high inflation rates abroad, promoted the appreciation of the Deutschmark — which Count Lambsdorff now deplores."

True, the trade unions do not make the exchange rates. But they are responsible for the wage policy which is one of the elements affecting prices.

Ultimately, below average inflation rates strengthen the position of a currency on international markets.

Supply and demand automatically make for the correct exchange rate provided no support mechanisms are used.

But even in the European system, which makes for monetary stability, exchange rates have had to be justified because the internal value of currencies involved drifted apart due to different inflation rates.

Granted, German goods and services have become more expensive on international markets due to the appreciation of the Deutschmark.

Germany's wages now top the list of complaints. But the conclusion drawn by Gerd Muhr of the German Trade Unions Federation is that the adjustment of Chinese goods to needs of Western markets.

Count Lambsdorff — and this has while become general routine with

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German prospects are also good for chemical equipment for steel mills and chemical factories.

maintaining farms could be enlarged and operate more economically.

The social position of German farmers has clearly improved in the past ten years, the Agriculture Ministry says. Net incomes per working family member increased from an average of DM12,312 to DM24,780 a year.

Agricultural pensions rose from DM175/115 (married/single) to DM432/288 a month during the same period.

But, said Herr Ertl, there is still room for improvement in agricultural social security.

Those farmers who have stuck to their land have a gratifyingly positive attitude towards their work, the minister said.

According to a recent study, most farmers would opt to become farmers again if given an alternative.

This is so because they feel that they are under less stress farming than they would be in other jobs and because the farm gives them an opportunity to prove and develop their abilities. dpa

(Frankfurter Rundschau, 13 August 1980)

Balance sheet  
outlines  
the decade

As a result, his report is backed by plenty of experience.

Our farmers, too, have been faced with experience — of a bitter nature — notwithstanding billions worth of subsidies to support agricultural prices and despite massive overproduction.

There is no major branch of our economy that has been more enthusiastic about mechanisation and so consistent in approving of rationalising jobs away.

One in four farmers has taken another job since 1970.

Herr Ertl's balance sheet shows that our farmers do not only complain and demand more and more for themselves.

They know that it is impossible to secure jobs unless farming remains competitive. There are branches of business that tend to forget this.

Gerhard Hoepfner  
(Lübecker Nachrichten, 8 August 1980)

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You can do almost anything with compressed air. Pneumatic devices can drill, grind, tighten screws, redirect fish, keep oil ports clean and shipping lanes free of ice.

Now, a Bad Kreuznach citizen is using compressed air in farming — and it looks as if his method will soon conquer the world.

The whole thing began with an annoying problem. When Eugen Zinck wanted to dig up his garden he found that the soil was full of water: the vibration of nearby construction machinery had so compressed the soil that rainwater could no longer seep away.

Herr Zinck — he holds more than 20 patents — had a brilliant idea: why not send compressed air into the soil?

He built a kind of airgun with a long pipe which he embedded in the ground. When he pulled the trigger, there was a loud pop, the surface of the soil lifted a couple of inches and a geyser of water shot out.

The air smelled of some noxious gas. But below the surface there was a clearly audible sound as if a plug had been pulled out of a drain. The water ran off and the garden was ready for planting.

Now, after another year of tinkering with his apparatus, Herr Zinck can clearly demonstrate what happens. To enoble the soil to breathe after it has been cleared by pneumatic pressure, he now loads his airgun with small plastic pellets which he shoots into the soil.

When the soil is dug over enbody can see that the pellets have spread over an area of several square metres.

Eugen Zinck: "Any soil aerated in such a way needs only a superficial loosening of the surface as farmers used to do for thousands of years before deep ploughing became necessary."

Herr Zinck is an expert on agriculture, having spent 30 years in development work for the Max Planck Institute for Agriculture and then on his own farm.

Researchers have long suspected that deep ploughing and fertilisers are harmful. Agricultural yields are diminishing, and to counter this farmers plough ever deeper, use ever increasing quantities of chemicals and compress the land with excessively heavy machinery. In doing so, they destroy their own soil.

Herr Zinck's invention not only makes for a more ecology-conscious way of farming but also for much more economy because less money is needed for agricultural machinery, chemicals, fuel, electricity, etc. Moreover, the soil is regenerated.

The